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| EXAMINER |
|---|
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| ART UNIT | PAPER NUMBER |
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| 2628 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | **Application No.** | **Applicant(s)** |
|---|---|---|
| | 10/051,008 | NAZANDA ET AL. |
| **Office Action Summary** | **Examiner** | **Art Unit** | |
| | Hau H. Nguyen | 2628 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>20 March 2006</u>.

2a)☒ This action is **FINAL.**          2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,18,20-24 and 26-31* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18 and 20-23* is/are allowed.

6)☒ Claim(s) *1-3,5-10,12-14,24 and 26-31* is/are rejected.

7)☒ Claim(s) *4 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *  c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## *Response to Arguments*

1.      Applicant's arguments filed March 20, 2006 have been fully considered but they

are not persuasive. In response to Applicant's arguments that reference Chin '101 does

not teach "...a multi-purpose buffer mechanism to simultaneously monitor a status of

said plurality of data requests...," the examiner disagrees. It should be noted that claim

language is given the broadest reasonable interpretation. First, Applicant has claimed "a

buffer mechanism" not a *buffer*, as remarked on page 7. Since the interface controller

14 monitors status of plurality of data requests, and maintaining the order of the

requests in the queues 64, 66, and 68, and further outputting responses to the requests

in said particular order (Fig. 5, and col. 12, lines 44-64). In addition, Applicant's

arguments fail to comply with 37 CFR 1.111(b) because they amount to a general

allegation that the claims define a patentable invention without specifically pointing out

how the language of the claims patentably distinguishes them from the references.

    Since the cited reference meets the minimum requirements of the claims,

rejections are maintained.

## *Claim Rejections - 35 USC § 102*

2.      The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the
> United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 8-10 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chin et al (6,202,101 hereinafter "Chin").

Chin teaches a system (Fig. 1) to process a plurality of data requests (such as, request to access system memory 18 via bus interface unit 14), comprising a plurality of memory locations (such as, cache 16 and system memory 18) each to store data; and a multipurpose buffer mechanism (bus interface unit 14 includes processor controller 42 in Fig. 2 and further having in-order queue 64, peripheral queue 66; and memory queue 68 in Fig. 4) to maintain an ordering of said data requests (in-order queue records the order of the requests, col. 3, lines 40-41) to said plurality of memory locations and data responses from said plurality of memory locations (circular FIFO in col. 3, lines 44-48, col. 4, lines 10-14 and lines 36-60). Therefore, at least claim 8 is anticipated by Chin.

As per claim 9, Chin teaches simultaneously maintains information regarding said plurality of data requests (col. 4, lines 36-60, the in-order queue maintains either an I/O pointer system or entry numbers depending on whether the requests and sent in-order or out-of-order. Since all the requests are maintain in the in-order queue and can

be monitored based on their respective locations in the buffer, they can be considered

as simultaneously maintain).

As per claim 10, Chin teaches an age counter section (entry number format, the

smaller the assigned number, the older the request is) and a buffer control section (Fig.

4, 74).

As per claim 12, Chin teaches said buffer control section identifies a status of

each of said plurality of data requests (the status can be determined based on their

respective locations or pointers in the buffer).

As per claim 13, Chin teaches to determine an age of said plurality of data

requests stored in said multipurpose buffer mechanism (also the age can be determined

based on their respective locations in the buffer, the oldest is the one point by the output

pointer as well known in the circular FIFO).

As per claim 14, Chin teaches said age is determined based on said age counter

section (pointer is considered/functioned as a counter which increment/decrement by

one at time).

## Claim Rejections - 35 USC § 103

4.      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.     Claims 1-3, 5-7, 24, and 26-31 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Chin et al (6,202,101 hereinafter "Chin").

The teachings of Chin are given in previous paragraph of this Office action.  Chin

further teaches a system (Fig. 1) comprising a CPU (12) having a cache (16); a

graphics accelerator (20), a frame buffer (24), and a system memory (18) connected to

a bus interface through respective buses (CPU bus, graphics bus (AGP) and memory

bus) and PCI bus to peripheral devices.  Method claim 24 is similar in scope to system

claim 8, and additionally requires monitoring a status of a plurality of operations

regarding said plurality of data requests.  Chin teaches each request queue may be a

circular FIFO buffer or may have I/O points which indicate the I/O locations and thus

there status can be seen from there the location of the circular FIFO or their pointers

(col. 3, lines 44-64).  It would have been obvious to one of ordinary skill in the art at the

time the present invention was made that the status of the request can be monitored

from the circular FIFO buffer based on their respective locations in the buffer in first-in-

first-out manner.  Therefore, at least claim 24 would have been obvious.

As per claims 26 and 27, Chin teaches obtaining said data comprising

maintaining an age counter for said plurality of data requests (either a pointer (output

pointer points to the oldest request) or the locations in the circular FIFO).

Claim 28 is similar in scope to claim 24, and thus is rejected under similar

rationale.

Claims 29-31 are similar in scope to claims 26-27, and thus are rejected under

similar rationale.

Claim 1 is similar in scope to claim 24, and thus is rejected under similar rationale.

As per claim 2, Chin teaches said multipurpose buffer mechanism maintains information regarding said plurality of data requests to a plurality of memory locations (Fig. 4, memory queue 68).

Claim 3 is similar in scope to claim 10, and thus is rejected under similar rationale.

As per claim 5, Chin teaches said buffer control section identifies a status of each of said plurality of data requests (the status can be determined based on their respective locations or pointers in the buffer).

As per claim 6, Chin teaches to determine an age of said plurality of data requests stored in said multipurpose buffer mechanism (also the age can be determined based on their respective locations in the buffer, the oldest is the one point by the output pointer as well known in the circular FIFO).

As per claim 7, Chin teaches said age is determined based on said age counter section (pointer is considered a counter which increment/decrement one at time).

### Allowable Subject Matter

6.      Claims 18 and 20-23 are allowed.

7.      Claims 4 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8.     The following is a statement of reasons for the indication of allowable subject matter:  The prior art made of record fails to anticipate or make obvious the claimed invention.  Specifically, the prior art fails to teach or suggest, in combination with the remaining elements, said age counter section comprising a plurality of shift registers as recited in claims 4, 11 and 20.

## *Conclusion*

9.     **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action.  In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action.  In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10.     Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is (571) 272-7787.  The examiner can normally be reached on 8:30am-5:30pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen

06/05/2006

Kee M. Tung
Primary Examiner